That Giant Sucking Sound May Be Your New TV

Flat-Panel Displays Devour Power, Even Before Add-Ons; Energy Star Blurs the Picture

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Prices for big-screen television sets are dropping, but the cost of home entertainment may still be headed up. That is because the fancy screens shoppers are lugging home this holiday season consume far more electricity than their old-school predecessors.

Consider that a 42-inch plasma set can consume more electricity than a full-size refrigerator -- even when that TV is used only a few hours a day. Powering a fancy TV and full-on entertainment system -- with set-top boxes, game consoles, speakers, DVDs and digital video recorders -- can add nearly $200 to a family's annual energy bill.

Most consumers aren't made aware of extra energy expenses when they are shopping for a TV. Energy Star tags, a government program that identifies the most energy-efficient models, won't begin flagging the greenest televisions, when turned on, until late next year. Currently, Energy Star judges energy consumption only in standby mode, limiting its usefulness.

While most new types of TV sets use far more electricity than the old-fashioned gadgets they replace, some upstarts are bigger energy hogs than others. In general, liquid crystal display, or LCD, screens use less power than plasma sets of comparable size. And in the largest screen sizes, projection televisions typically use less electricity than LCD or plasma models.

A 28-inch conventional television set containing a cathode-ray picture tube, or CRT, for example, often uses about 100 watts of electricity. A 42-inch LCD set, a typical upgrade item, requires about twice that amount of electricity. But the real beast is the plasma set. A 42-inch model often sucks up 200 to 500 watts, and a 60-plus-inch plasma screen can consume 500 to 600 watts, depending on the model and programming, according to the Environmental Protection Agency.

In the biggest screen sizes, a projection television is a better option from an energy-use standpoint because it consumes about 150 watts to 200 watts, far less than a plasma or LCD screen.

Assuming each screen is on five hours a day, the annual energy bill for the conventional 28-inch television set would be about $30 a year, compared with about $130 for the 60-

inch plasma model, assuming power costs 12 cents a kilowatt hour. By the time other devices are added -- including game consoles, speakers and DVDs -- the cost to power the whole works can top $200 annually. (How to do the math: Something that draws a constant 100 watts of electricity uses 2.4 kilowatt hours of electricity in a 24-hour period or 876 kilowatt hours in a year. At 12 cents a kilowatt hour, the annual cost would be $105.12.)

"What scares us is the prices for plasma sets are dropping so fast that people are saying, why get a 42-inch plasma set when you can get a 60-inch or 64-inch one," says Tom Reddoch, director of energy efficiency for the nonprofit Electric Power Research Institute's laboratory in Knoxville, Tenn., an independent organization that advises the utility sector. "They have no idea how much electricity these things consume."

Doug Johnson, senior director of technology policy for the Consumer Electronics Association, says the industry is working to improve disclosure and energy efficiency. He says comparing television energy use to refrigerator energy use is "hackneyed," adding, "when was the last time the family gathered around the refrigerator to be entertained."

But consumers making an effort to go greener at home -- and who also want to ditch their bulky old TV set -- can be in a bit of a bind. The energy savings gleaned from swapping out incandescent light bulbs for energy-efficient compact fluorescent lights, for example, can easily be canceled out by the pileup in entertainment gear.

Currently, 11% to 13% of the average American household's electricity bill stems from consumer electronics. But that is projected to rise to 18% by 2015, according to the EPA, part of the Department of Energy.

At a Western Appliance & Television store in San Leandro, Calif., salesman Mike Lemos says customers often seek energy-saving appliances but seem less focused on electricity use when it comes to entertainment gear. "Televisions are a more emotional purchase," he says. "You look at a high-definition TV, and it's hard not to get excited."

Just inside the entrance of a nearby Costco store, retiree Pat Brown paused to look at a riveting display of plasma and LCD screens stacked up, billboard-style, to seize the attention of shoppers. Many stopped dead in their tracks to take in the noisy display. Ms. Brown, who lives in nearby Oakland, said she always looks for the blue Energy Star tag when buying appliances, but she was unaware that Energy Star, for now, doesn't cover sets when they are turned on.

"I'm retired, so my TV is on pretty much all the time," she said. "I definitely would want better information before buying one of these, especially if there's a lot of difference between them."

Set-top boxes, which deliver programs and movies through the Internet, cable or satellite dishes, also can be energy hogs. In fact, they typically consume about the same amount of power whether they are being used or standing by. An older-style box that functions as a standard receiver for cable-TV viewing usually draws fewer than 25 watts of power, but a more robust version that offers high-definition viewing and includes a built-in recorder may consume three times as many. According to a calculation by the Natural Resources Defense Council, a typical high-definition cable box with a built-in digital recorder consumes about 350 kilowatt hours of juice annually, more than a conventional television set and clothes washer combined.

It can be tough for shoppers to know how much energy a TV set will consume. While the EPA's Energy Star program covers TV sets only in standby mode, the Federal Trade Commission's "Energy Guide" labeling, which tells how much electricity an appliance consumes and estimates the annual energy cost, isn't used on TV sets.

The FTC says "it has not made a determination it will label TVs," says Hampton Newsome, an FTC staff attorney in the Bureau of Consumer Protection and Enforcement. In the past, the agency didn't think there was enough difference between television sets to warrant Energy Guide labeling. Now the FTC is in a holding pattern waiting for the EPA

to finish work establishing the proper test methods for comparing sets when turned on. This isn't as straightforward as it sounds, because energy use differs according to the complexity of programming content.

For its part, the EPA appears to have settled on a process that will allow consumers to compare sets of the same size, across technology types. The agency expects to have improved Energy Star labels on television screens by November 2008 and to get them on set-top boxes, also in active and standby modes, by December 2008.

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